Analysis of the Five-Year PACT Longitudinal Data

Student Mobility, Student Retention in Grade & PACT Achievement over Time

PO Box 11867
Blatt Building, Rm 227
Columbia, SC 29211

www.sceoc.org

October, 2005

Executive Summary

This report presents findings from the analysis of five consecutive years of individual student Palmetto Achievement Challenge Test (PACT) data covering the period 2000 through 2004. The test results for each year were identified for each student to create a longitudinal database. This five-year database of data from the state accountability tests may be unique to South Carolina, since most other states have not administered their standards-based accountability tests in grades three through eight for this length of time. We have not located similar reports from other states of student progress in a standards-based system over an extended period of time which could provide comparative information to interpret the findings of this report.

The database contains data for two groups, or cohorts, of students: students who attended grade 3 and students who attended grade 4 in the 1999-2000 school year. The information for the Grade 3 2000 cohort includes data for grades three through seven, and the grade 4 2000 cohort covers grades four through eight. The database is based on all students tested in PACT English language arts (ELA) or math in grades 3 and 4 in 2000 and for subsequent years, although not all students could be followed for the full five year period. The five year database is composed of data from 41,940 students in the Grade 3 2000 cohort and 37,983 students in the Grade 4 2000 cohort for a total of 79,923 students. The analysis addressed the following questions.

What was the level of mobility over time of students from district to district?

Approximately one in ten (8,503, or 10.6%) of the students in this study moved from one district to another at least once in the five year period, with 2.4% (1,965 students) attending at least three different districts during the five years studied. When students move from one school district to another they need to adjust to a different school and social environment, which may adversely affect their school performance until they have successfully adapted. Students who change school districts often will have more adjustments to make than students who never or seldom move, so examining the mobility of students can provide some insights into student achievement.

How many students repeated one or more grade levels during the five years studied?

Almost one in ten (9.3%, or 7,421) students repeated a grade level during the five year period. It is estimated that the additional costs for the extra year of instruction required for these two grade-level groups of students over the four years between 2001 and 2004 is $42,986,681.

What were the achievement levels of the students at the beginning of the study in 2000, and what were their achievement levels in 2004?

In ELA, more of the students scored Below Basic in 2004 than they had in 2000 (22,387, or 28.3%, scored Below Basic in 2004, whereas only 19,672, or 24.9%, of the same students scored Below Basic in 2000). Also in ELA, fewer students scored Proficient or Advanced in 2004 than they had in 2000 (20,080, or 25.4% in 2004 compared to 31,792, or 40.2%, in 2000). Conversely, fewer of the students scored Below Basic in math in 2004 than they had in 2000 (23,602, or 29.7% in 2004 compared to 25,817, or 32.5% in 2000), and more scored Proficient or

Advanced in 2004 (21,698, or 27.3% in 2004, compared to 20,508, or 25.8% in 2000). More of the students had failed (scored Below Basic) the math test than the ELA test in 2000, but by 2004 the numbers of students failing the two tests were nearly equal because the number failing math had decreased and the number failing ELA had increased.

What was the achievement after five years of students who scored Below Basic in 2000? What was the achievement after five years of students who scored Proficient or Advanced in 2000?

Almost seven out of ten (69.6%) of the students who scored Below Basic on the ELA test in 2000 also scored Below Basic in 2004. The percentage scoring Below Basic in math in both 2000 and 2004 (62.0%) was smaller than in ELA. A higher percentage of the students scored Proficient or Advanced in math in both 2000 and 2004 (70.6%) than in ELA (53.9%).

What were the trends in achievement over the five years?

The average annual achievement levels in ELA of students who scored Below Basic 1 (the lowest range of achievement on the PACT tests), Below Basic 2, Basic, Proficient, or Advanced at the beginning of the study in 2000 tended to decline between grades three and eight, while math achievement remained at similar levels or increased over the same time period. Achievement gaps between African American and White students and gaps between students participating in the federal free or reduced price lunch program and pay lunch students tended to appear by 2001 and to increase over time in both ELA and math. Achievement gaps between male and female students having similar initial levels of achievement also were evident in ELA, but not in math. The ELA achievement of students who repeated a grade was highest at the end of the grade repeated, but declined after the repeated year to levels approaching those the year before the student was retained. The math achievement of students repeating a grade also peaked at the end of the year repeated but tended to remain at that higher level during subsequent years.

What differences were there among school districts in the achievement of their students over time?

Reports listing the percentages of students whose performance improved between 2000 and 2004 for individual school districts were generated and distributed to school district personnel at a meeting in Columbia on August 18, 2005. The purpose of the reports was to inform school districts regarding the progress of the two cohorts of students to assist the districts with instructional planning. The district analyses revealed that there were differences among districts in the success with which the achievement of these students was increased or maintained, with some districts showing significant improvement compared to the state in ELA, math, or in both areas. Summaries of district performance are included in the Appendix of the report.

The analyses in this report indicate that PACT ELA achievement over time tends to decline from the elementary through the middle grades, but that PACT math achievement over the same time period improves. The analyses of the progress of students who repeat a grade level indicate that, after an initial peak, ELA achievement

declines and math achievement remains stable, although it does not increase. The analyses suggest that remediation strategies other than retention should be considered, and that the considerable investment currently devoted to grade retention may be better used for prevention of failure rather than remediation after a student fails. The analysis of district improvement identifies school districts which have been successful at increasing individual student achievement over time. These districts provide model practices and procedures for others to emulate.

Analysis of the Five-Year PACT Longitudinal Data: Student Mobility, Student Retention in Grade, and PACT Achievement Over Time

This report presents findings from the analysis of longitudinally matched student Palmetto Achievement Challenge Test (PACT) data covering the five-year period 2000 through 2004. PACT test results are reported for students in grades 3 through 8 every year. When the yearly results for each student are placed in a single file so the student's progress over the years can be evaluated, the file is referred to as a longitudinal data file. While the annual school Improvement Ratings are based on longitudinal PACT data covering a two-year period (the current year and the previous year), a statewide database containing longitudinal PACT data for five years has not previously been available. Unlike South Carolina, many other states did not begin testing all students in grades three through eight with standards-based tests in English language arts (ELA) and math until after the federal No Child Left Behind legislation was enacted in 2001, so they have not had time to develop five-year databases. South Carolina may be one of the first states to develop a statewide longitudinal database of their standards-based test data covering this amount of time, so comparative information on the results reported in this analysis is not available at this time. Until studies based on other similar longitudinal data are available, interpretation of the results reported in this study should be made with caution.

The longitudinal data analyzed for this report are based on two cohorts of students: students attending grade 3 in the 1999-2000 school year (referred to as the Grade 3 2000 cohort in the remainder of this report); and students attending grade 4 in 1999-2000 (referred to as the Grade 4 2000 cohort). The PACT data for each of these students were matched with the student's PACT results from the Spring 2001, Spring 2002, Spring 2003, and Spring 2004 test administrations to create the longitudinal data base. The data for all students tested in grades 3 or 4 in 2000 were followed for each year through 2004. Data from students who repeated grades during the five-year period and data from students with disabilities who were tested at a lower grade level than the grade enrolled ("off-level" tests) were included in the database, along with data from students who were promoted each year and students who were tested on grade level.

Most students in the Grade 3 2000 cohort attended grade 7 in 2004, but students who repeated one grade level during the time period were attending grade 6 in 2004 and students who repeated two grade levels were attending grade 5 in 2004. Similarly, students in the Grade 4 2000 cohort were most likely to be attending grade 8 in 2004, but repeaters attended grade 6 or 7, depending on the number of grades repeated. This report is based on the results from students for whom test records could be matched for all five years studied; a few students had test records which were matched every year but had incomplete test results for a given year [e.g., an English Language Arts (ELA) score reported, but no math score].

The longitudinal database began with PACT test data from the 52,778 students enrolled in grade 3 in 1999-2000 and the 48,555 students enrolled in grade 4 in 1999-2000. These data were matched with data from each subsequent PACT administration through 2004. Complete student data for all five years (2000-2004) were matched for 41,940 students from the Grade 3 2000 cohort (79.5% of the 55,778 students in the original file)

and for 37,983 students from the Grade 4 2000 cohort (78.2%). The database contains complete data for five years for 79,923 students.

Some of the records in the original data files could not be located and matched for all five years. Several factors could account for the loss of student data over time:

- Students would not have been tested with PACT after 2000 if they left the state, attended private or home school, or were deceased;
- Some students with severe disabilities may have been tested with the alternate testing program rather than PACT after being tested initially with PACT in 2000;
- Students may have been tested with PACT each year, but their identifying information was inaccurate or incomplete;
- Students may have been tested each year, but were promoted two grade levels in a given year rather than one (the records were not searched to identify these students).

The loss of student data from the study over time does not appear to be random because the records from lower-scoring students were significantly more likely to be lost than records from higher-achieving students. Table 1 illustrates the relationship between prior year's achievement and likelihood to be lost from the study. This table lists the matching results for students from the Grade 3 2000 cohort who scored at various levels on the 2003 PACT ELA test when an attempt was made to locate their matching data from the 2004 PACT ELA test file. For example, the percentage of students scoring Below Basic 1 in 2003 whose data could not be located in the 2004 PACT file was almost three times the percentage of students who scored Advanced in 2003.

Table 1
Match of 2003 to 2004 PACT ELA Records
By Performance Level in 2003
Grade 3 2000 Cohort

2003 Performance Level	Number of 2003 Records	Number Not Matched	% Not Matched
Below Basic 1	9,152	611	6.7
Below Basic 2	5,969	301	5.0
Basic	16,652	722	4.3
Proficient	9,964	326	3.3
Advanced	2,050	47	2.3

Similar results were observed for the attempted matches for the 2000-2001, 2001-2002, and 2002-2003 matches for the grade 3 2000 cohort and for all matches for the grade 4 2000 cohort. Chi square tests of significance of the patterns of data loss were significant for all the comparisons for both cohorts, indicating that data from lower-achieving students were significantly more likely to be lost from the study than data from higher-achieving students.

The demographic characteristics of the students for whom all five years of data could be matched were similar to those of the original Grade 3 2000 and Grade 4 2000 files (Table 2).

Table 2
Demographic Characteristics
2000-2004 Longitudinal Data

Characteristic		Grade 3 2000 Cohort		Grade 4 2000 Cohort	
		Original File (n=52,778)	Matched File (n=41,940)	Original File (n=48,555)	Matched File (n=37,983)
Ethnic Group	African American	42.9%	43.5%	42.1%	42.2%
	White	54.6%	54.4%	55.5%	55.7%
	Other	2.4%	2.1%	2.5%	2.1%
Gender	Female	48.9%	49.9%	48.8%	50.3%
	Male	51.1%	50.1%	51.2%	49.7%
Lunch	Free	45.0%	43.6%	44.6%	42.6%
	Reduced	8.6%	8.7%	8.5%	8.6%
	Pay	46.4%	47.7%	46.9%	48.8%

Note: Percentages may not add to 100 due to rounding.

However, the longitudinal files had higher proportions of female students and lower proportions of students eligible for the federal lunch program than the original data files. Thus male students, lower socioeconomic status (SES) students, and lower-achieving students are somewhat under-represented in the longitudinal file compared to the original populations of students.

The longitudinal database provides the information to study student achievement levels and progress over time. The database also allows study of the relationships between student demographic characteristics and student achievement over time. Since information on the school and district each student attended each year is also available from the database, analyses of the data by district and school as well as by the state as a whole are possible. The analyses in this report deal with the following questions:

1. What was the level of mobility over time of students from district to district?
2. How many students repeated one or more grade levels during the five years studied?
3. What were the achievement levels of the students at the beginning of the study in 2000, and what were their achievement levels in 2004?
4. What was the achievement after five years of students who scored Below Basic in 2000?
5. What was the achievement after five years of students who scored Proficient or Advanced in 2000?
6. What were the trends in achievement over the five years?

7. What differences were there among school districts in the achievement of their students over time?

The remainder of this report addresses the questions above. Analyses were performed separately for the Grade 3 2000 and Grade 4 2000 cohorts. Even though different students were in the two cohorts, the trends observed among the results from students in the two cohorts over time were very similar. For the sake of brevity, many of the results reported in this report are based on analyses of data from the grade 3 2000 cohort; analyses for both cohorts will be available in a longer technical report available in mid-October 2005.

What was the mobility over time of students from district to district?

The extent of mobility among South Carolina elementary and middle school students is a factor to consider when evaluating student achievement. Students who move from one district to another are likely to experience disruptions to their lives which require a period of time for adjustment. Their home life routines may change, they need to make new friends, and they may experience changes in their school experiences such as a different curriculum. These changes may affect their school success until they have adjusted. Students who move frequently have more adjustments to make, and their achievement may be affected more severely. The longitudinal database provides some information on the extent to which students in the two cohorts changed school districts during the upper elementary and middle school years. The data in Table 3 indicate that more than 10% of the students moved from one district to another during the study period, but that relatively few students changed districts frequently. However, approximately 2% of the students attended three different districts in five years.

Table 3
Student Mobility Across Districts
Students Attending Grade 3 or 4 in 1999-2000

Cohort	Grade 3 Cohort			Grade 4 Cohort			Both Grade 3 & 4 Cohorts Combined		
No. of Times Students Changed School Districts Over 5 Years	No. of Students	% of Total Students (n=41,940)	% of Students Changing Districts (n=4,618)	No. of Students	% of Total Students (n=37,983)	% of Students Changing Districts (n=3,885)	No. of Students	% of Total Students (n=79,923)	% of Students Changing Districts (n=8,503)
Changed Districts Every Year (4 times in 5 years)	17	0.04	0.4	11	0.03	0.3	28	0.04	0.3
Changed Districts 3 Times in 5 Years	157	0.4	3.4	126	0.3	3.2	283	0.4	3.3
Changed Districts 2 Times in 5 Years	881	2.1	19.1	773	2.0	19.9	1,654	2.1	19.5
Changed Districts 1 Time in 5 Years	3,563	8.5	77.2	2,975	7.8	76.6	6,538	8.2	76.9
Stayed in Same District All 5 Years	37,322	89.0	NA	34,098	89.8	NA	71,420	89.4	NA

Note: Percentages may not add to 100 due to rounding.

How many students repeated one or more grade levels during the five years studied?

One means for providing remediation to students who fall behind their age-mates in school achievement and are not able to maintain grade-level achievement is to have the students repeat a grade. Repeating a grade is believed to provide opportunities for students to "catch up" and, perhaps, to mature so they can get back on grade level. A large body of research (see *Retention and Promotion in South Carolina: A White Paper Prepared for the SC Department of Education by the Southern Regional Education Board*, August 2000, available at http://www.myscschools.com/reports/retained.htm) indicates that retention in grade may not be effective for all students and is associated with dropping out of school when students get older. The longitudinal database provides some information on the degree to which retention in grade occurred during the five year period among the students in the two cohorts studied (Table 4). Almost 10% (7,421) of the students in these cohorts were retained at least once between third grade and seventh grade. In the Grade 3 2000 cohort grade 3 was repeated most frequently, followed by grade 6. In the Grade 4 2000 cohort grade 4 was repeated most frequently, followed closely by grades 6 and 7 (the information is not yet available to determine the extent that members of the Grade 3 2000 cohort will repeat grade 7). The data suggest that students in these cohorts may be retained about as often at the middle grades level as at the elementary level.

Table 4
Grade Level Promotion/Retention Patterns
2000-2004 Longitudinal Data

Cohort	Grade 3 Cohort		Grade 4 Cohort		Both Grade 3 & 4 Cohorts Combined	
Number of grade levels repeated in 5 years studied	Number Students	%	Number Students	%	Number Students	%
Repeated 2 grade levels or 1 grade level twice	82	0.2	134	0.4	216	0.3
Repeated 1 grade level	3,660	8.7	3,545	9.3	7,205	9.0
No grade levels repeated	38,198	91.1	34,304	90.3	72,502	90.7
Total	41,940	100	37,983	100	79,923	100

Each year that a student is retained in a grade level increases the total years the student attends school until he or she graduates, which adds the cost associated with that extra year to the total expenditures for the student's education. Based on the per-pupil expenditures for instruction reported on the annual elementary and middle school report cards over the four years in which data were available to determine their retention status, the extra expenditure for the 7,421 students in the two cohorts retained in grade is estimated to be $42,986,681 for the years 2001 through 2004. There are four more cohorts in a typical elementary school (students in Kindergarten and in grades 1, 2, and 5) who, if they experience similar retention patterns between third and eighth grade, will generate similar extra expenditures for the system. In light of the achievement data for repeaters reported later in this report, careful consideration should be made when choosing retention as the method for remediating students who fall behind.

What were the achievement levels of the students at the beginning of the study in 2000, and what were their achievement levels in 2004?

Table 5 lists the number and percentages of students in both cohorts scoring at the Below Basic, Basic, or the Proficient or Advanced levels on the PACT ELA test at the beginning of the study in 2000 and at the end in 2004. The data listed in the table are based on the same students for both years reported and represent the differences in performance by these students as elementary students in 2000 and as middle school students in 2004. The number and percentages of these students scoring Below Basic in ELA was higher in 2004 than in 2000, and the number and percentage of students who scored Proficient or Advanced decreased from 40.2% in 2000 to 25.4% in 2004.

Table 5
PACT ELA Performance in 2000 & 2004
2000-2004 Longitudinal Data
Students Attending Grade 3 or 4 in 1999-2000

	Grade 3 Cohort				Grade 4 Cohort				Both Grade 3 & 4 Cohorts Combined			
Performance Level	2000, Grade 3		2004, Grade 7 most students, 5 or 6 for repeaters		2000, Grade 4		2004, Grade 8 most students, 6 or 7 for repeaters		2000, Grades 3 & 4		2004, Grades 7 & 8 most students	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Below Basic	9,955	24.0	12,102	29.2	9,717	25.8	10,285	27.3	19,672	24.9	22,387	28.3
Basic	14,348	34.6	19,089	46.0	13,305	35.4	17,561	46.7	27,653	35.0	36,650	46.3
Proficient or Advanced	17,197	41.4	10,309	24.8	14,595	38.8	9,771	26.0	31,792	40.2	20,080	25.4
Totals	41,500	100	41,500	100	37,617	100	37,617	100	79,117	100.1	79,117	100

Note: Percentages may not add to 100 due to rounding.

The results for the PACT math tests are listed in Table 6. For the combined data for both cohorts, the number and percentage of students scoring Below Basic was lower in 2004 than in 2000, while the number and percentage scoring Proficient or Advanced in 2004 was higher than in 2000. Contrary to the ELA results, performance on the PACT math tests appeared to increase for these students over time.

Table 6
PACT Math Performance in 2000 & 2004
2000-2004 Longitudinal Data
Students Attending Grade 3 or 4 in 1999-2000

	Grade 3 Cohort				Grade 4 Cohort				Both Grade 3 & 4 Cohorts Combined			
Performance Level	2000, Grade 3		2004, Grade 7 most students, 5 or 6 for repeaters		2000, Grade 4		2004, Grade 8 most students, 6 or 7 for repeaters		2000, Grades 3 & 4		2004, Grade 7 or 8 most students	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Below Basic	12,222	29.3	11,531	27.7	13,595	36.0	12,071	32.0	25,817	32.5	23,602	29.7
Basic	18,384	44.1	16,959	40.7	14,710	39.0	17,160	45.5	33,094	41.7	34,119	43.0
Proficient or Advanced	11,085	26.6	13,201	31.7	9,423	25.0	8,497	22.5	20,508	25.8	21,698	27.3
Totals	41,691	100	41,691	100.1	37,728	100	37,728	100	79,419	100	79,419	100

Note: Percentages may not add to 100 due to rounding.

What was the achievement after five years of students who scored Below Basic in 2000? What was the achievement after five years of students who scored Proficient or Advanced in 2000?

An important measure for determining the success of efforts to increase student achievement is the number and percentage of students who originally failed the tests (scored Below Basic) but raised their achievement to at least the Basic level over time. Along with ensuring that students who originally fail will later find success, a successful system also must support students who originally score at high levels (Proficient or Advanced) so they maintain high performance over time. These measures for PACT

ELA are presented in Table 7. The data for the combined cohorts indicate that almost seven of every ten students who scored Below Basic on the third or fourth grade ELA test also scored Below Basic on the seventh or eighth grade test, respectively, five years later. Over 13,000 students attending seventh or eighth grade in 2004 who scored Below Basic in ELA had also scored Below Basic in 2000. Table 7 also shows that somewhat more than half (53.9%) of the students who scored Proficient or Advanced in ELA in 2000 also scored Proficient or Advanced in 2004.

Table 7
PACT ELA Performance Comparisons
2000-2004 Longitudinal Data
Students Attending Grade 3 or 4 in 1999-2000

Cohort		Grade 3 Cohort		Grade 4 Cohort		Both Grade 3 & 4 Cohorts	
Student Group		Number	%	Number	%	Number	%
Scored Below Basic in 2000	Scored Below Basic in 2000 and in 2004	7,067	71.0	6,616	68.1	13,683	69.6
	Scored Basic or above in 2004	2,888	29.0	3,101	31.9	5,989	30.4
	Total	9,955	100	9,717	100	19,672	100
Scored Proficient or Advanced in 2000	Scored Proficient or Advanced in 2000 and in 2004	8,874	51.6	8,258	56.6	17,132	53.9
	Scored lower than Proficient in 2004	8,323	48.4	6,337	43.4	14,660	46.1
	Total	17,197	100	14,595	100	31,792	100

The data for PACT math are listed in Table 8. Approximately 6 of 10 students who scored Below Basic on PACT math in 2000 also scored Below Basic in 2004 compared to 7 of 10 students scoring Below Basic on ELA in both 2000 and 2004. The data also indicate that students who originally scored Proficient or Advanced in math were more likely to maintain their performance after five years than students scoring Proficient or Advanced originally in ELA (70.6% of students scoring Proficient or Advanced on PACT math in 2000 also scored at those levels in 2004, compared to 53.9% for ELA).

Table 8
PACT Math Performance Comparisons
2000-2004 Longitudinal Data
Students Attending Grade 3 or 4 in 1999-2000

Cohort		Grade 3 Cohort		Grade 4 Cohort		Both Grade 3 & 4 Cohorts	
Student Group		Number	%	Number	%	Number	%
Scored Below Basic in 2000	Scored Below Basic in 2000 and in 2004	7,290	59.6	8,724	64.2	16,014	62.0
	Scored Basic or above in 2004	4,932	40.4	4,871	35.8	9,803	38.0
	Total	12,222	100	13,595	100	25,817	100
Scored Proficient or Advanced in 2000	Scored Proficient or Advanced in 2000 and in 2004	8,293	74.8	6,190	65.7	14,483	70.6
	Scored lower than Proficient in 2004	2,792	25.2	3,233	34.3	6,025	29.4
	Total	11,085	100	9,423	100	20,508	100

What were the trends in achievement over the five years?

The previous analyses examined the achievement levels of the students at the beginning of the study in 2000 and at the end in 2004, but those analyses do not provide information on the achievement levels of the students during the intermediate years. To conduct the achievement trend analyses reported in this section, the PACT performance levels for each student were converted to numeric values so means could be computed for each year. This is the same methodology as used for computing the school and district report card Absolute ratings. The conversion of the PACT performance levels to numeric values was conducted using the values in Table 9.

Table 9
Conversion of PACT Performance Levels to Numeric Values

PACT Performance Level	Numeric Value
Below Basic 1	1
Below Basic 2	2
Basic	3
Proficient	4
Advanced	5

The numeric values corresponding to the performance levels for each student were averaged across the groups of students whose data are reported in the trend analyses, resulting in mean achievement levels for each group of students for each of the years studied. The mean achievement levels were rounded to the nearest tenth for reporting, as is done when calculating the Absolute ratings.

The trends in PACT achievement over the years 2000 through 2004 are reported in the figures in this section. Unless otherwise noted, the achievement trends reported are for all students in the database, including students who were promoted each year, students who repeated one or more grades, and students with disabilities who were tested at an off-level grade. The trend analyses are reported for groups of students scoring at the Below Basic 1, Below Basic 2, Basic, Proficient, or Advanced levels in 2000, and the performance of the students in each of these initial performance groups are reported for the subsequent years. This analysis permits an examination of the degree to which student achievement in ELA and math conformed to the intention that students initially scoring Below Basic or Basic will increase their performance over time, and students scoring initially at the Proficient or Advanced levels will maintain their high levels of performance over time.

In general, the achievement trends for students in the Grade 3 2000 and Grade 4 2000 cohorts were similar; most of the trend analyses reported in this report are for the Grade 3 2000 cohort, although trends for both cohorts will be reported in an expanded report available in mid-October 2005. The groups and subject areas reported in each figure are:

- Figure 1: ELA performance for all students in the Grade 3 2000 cohort;
- Figure 2: ELA performance for all students in the Grade 4 2000 cohort;
- Figure 3: Math performance for all students in the Grade 3 2000 cohort;
- Figure 4: Math performance for all students in the Grade 4 2000 cohort;
- Figure 5: ELA performance for African American and White students, Grade 3 2000 cohort;
- Figure 6: Math performance for African American and White students, Grade 3 2000 cohort;
- Figure 7: ELA performance by student gender, Grade 3 2000 cohort;
- Figure 8: Math performance by student gender, Grade 3 2000 cohort;
- Figure 9: ELA performance by SES, Grade 3 2000 cohort;
- Figure 10: Math performance by SES, Grade 3 2000 cohort;
- Figure 11: ELA performance of students repeating grade 3 in 2001, Grade 3 2000 cohort;

- Figure 12: Math performance of students repeating grade 3 in 2001, Grade 3 2000 cohort.

ELA Performance Trends, Grade 3 2000 and Grade 4 2000 Cohorts, All Students

Figure 1
Mean PACT ELA Performance Over 5 Years
By Initial Performance Level
2000-2004 Longitudinal Data
Students Attending Grade 3 in 2000

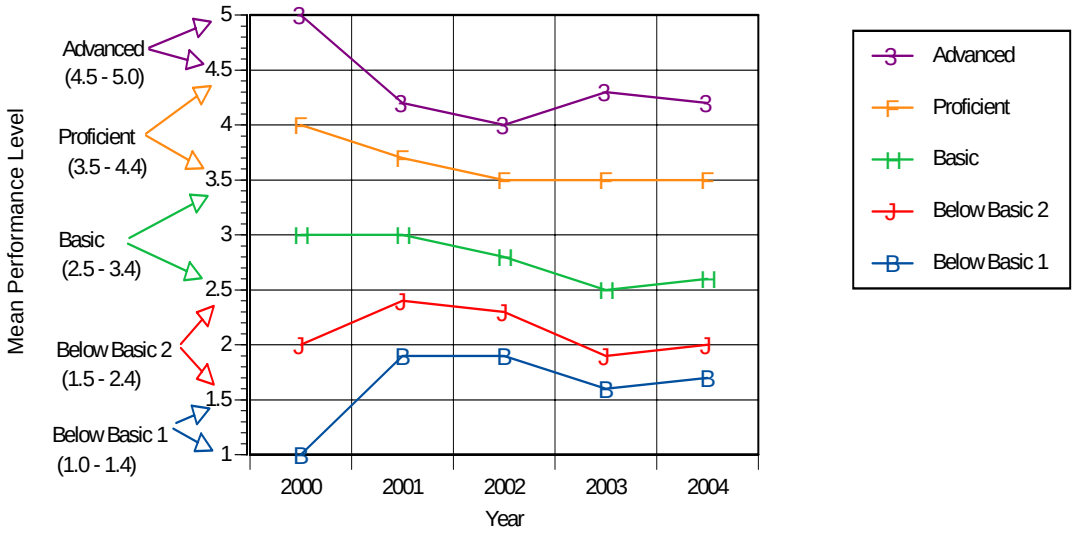
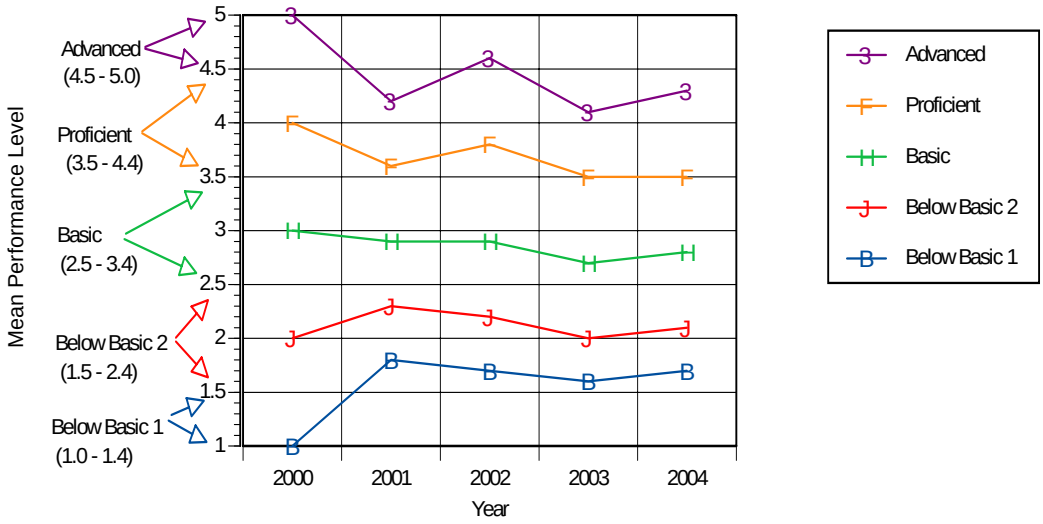


Figure 2
Mean PACT ELA Performance Over 5 Years
By Initial Performance Level
2000-2004 Longitudinal Data
Students Attending Grade 4 in 2000



The performance trends in ELA are similar for both cohorts. Students initially scoring Below Basic 1 increased their average performance to the Below Basic 2 level in 2001, but performance in subsequent years remained at the Below Basic 2 level. Students initially scoring at the Below Basic 2 level also saw an increase in their average achievement in 2001, although their average remained below the Basic level and fell back to the original Below Basic 2 level. Students initially scoring Basic saw a slow decline in their average scores over time; the average scores for these students in the Grade 3 2000 cohort declined to the borderline between Basic and Below Basic 2 by the end of the study. Students initially scoring Proficient experienced a decline in their average scores to nearly Basic over time. Students initially scoring Advanced also experienced a decline in their scores to the Proficient level. Since these students initially scored at the highest levels possible on the tests it is not surprising that their average scores would decline somewhat over time (they could not score higher than Advanced), but the average scores fell below the Advanced level to Proficient. An overall trend observed for PACT ELA is that students initially scoring Below Basic 1 and Below Basic 2 experienced increases in their average performance in the second year studied, but those increases did not continue and were barely sustained over time. The other overall ELA trend is that students who initially scored Proficient or Advanced were not able to sustain those scores over time.

Figure 3
Mean PACT Math Performance Over 5 Years
By Initial Performance Level
2000-2004 Longitudinal Data
Students Attending Grade 3 in 2000

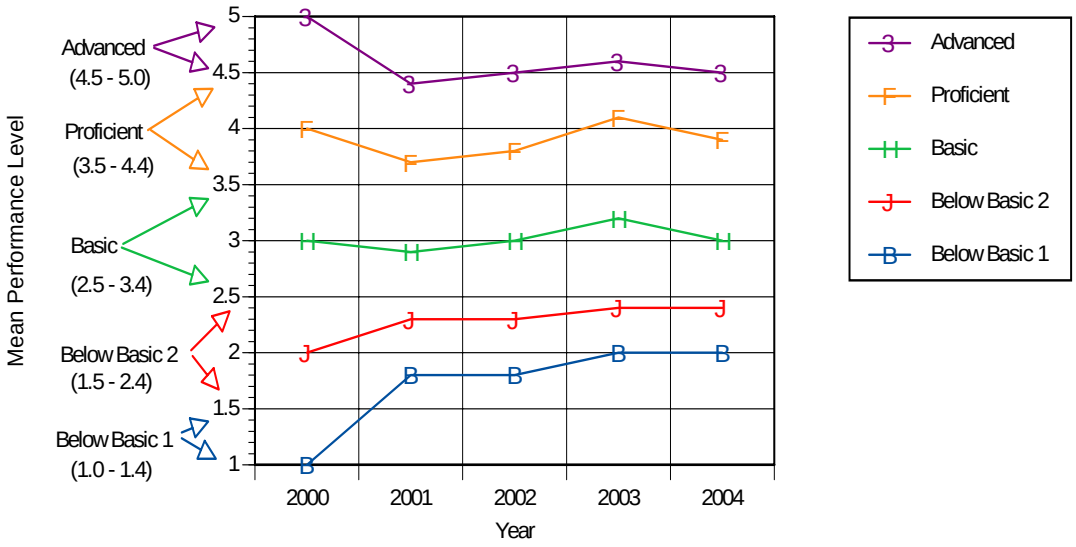
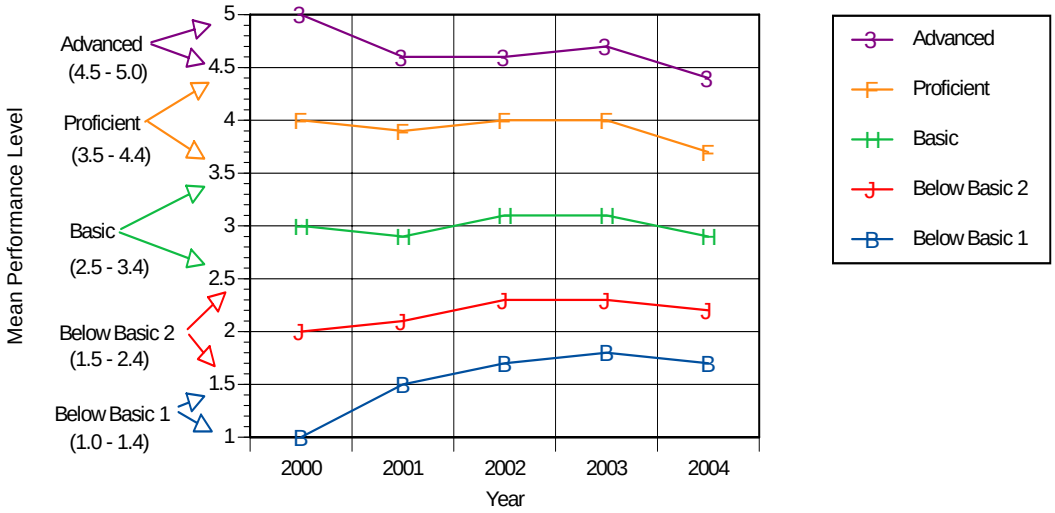


Figure 4
Mean PACT Math Performance Over 5 Years
By Initial Performance Level
2000-2004 Longitudinal Data
Students Attending Grade 4 in 2000



The performance trends in math are similar in both cohorts studied. Students initially scoring Below Basic 1 saw an increase in their average scores to the Below Basic 2 level; students in the Grade 3 2000 cohort maintained those gains over time as did students in the Grade 4 2000 cohort through 2003, although they experienced a small decline on the grade 8 math test in 2004. Students initially scoring Below Basic 2 also experienced an increase over time to approach the Basic level, although the students in the Grade 4 2000 cohort also saw a drop in their eighth grade scores in 2004. Students initially scoring Basic maintained an average Basic score through 2004, although students in both cohorts saw a decline in their 2004 scores. After a drop in their average scores in 2001, students from the Grade 3 2000 cohort who initially scored Proficient maintained their Proficient performance level through 2004, although their average scores dropped somewhat in 2004. Students from the Grade 4 2000 cohort maintained their Proficient performance through 2004, although they also experienced a decline in average performance in 2004. Students in both cohorts who initially scored Advanced also generally maintained their Advanced average performance, although students in the Grade 4 2000 cohort scored in the Proficient range on average in 2004. The overall trends in math are that initially lower-scoring students experienced some increases in average achievement over time and that students scoring Proficient or Advanced initially maintained their average performance levels over time.

Figure 5

Mean PACT ELA Performance Over 5 Years
By Ethnic Group & Initial Performance Level
2000-2004 Longitudinal Data
Students Attending Grade 3 in 2000

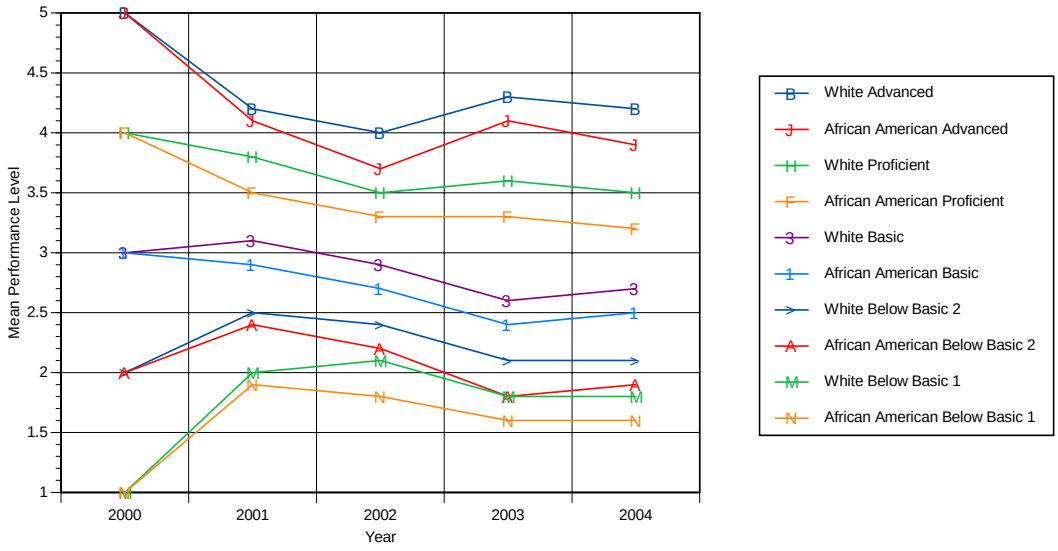
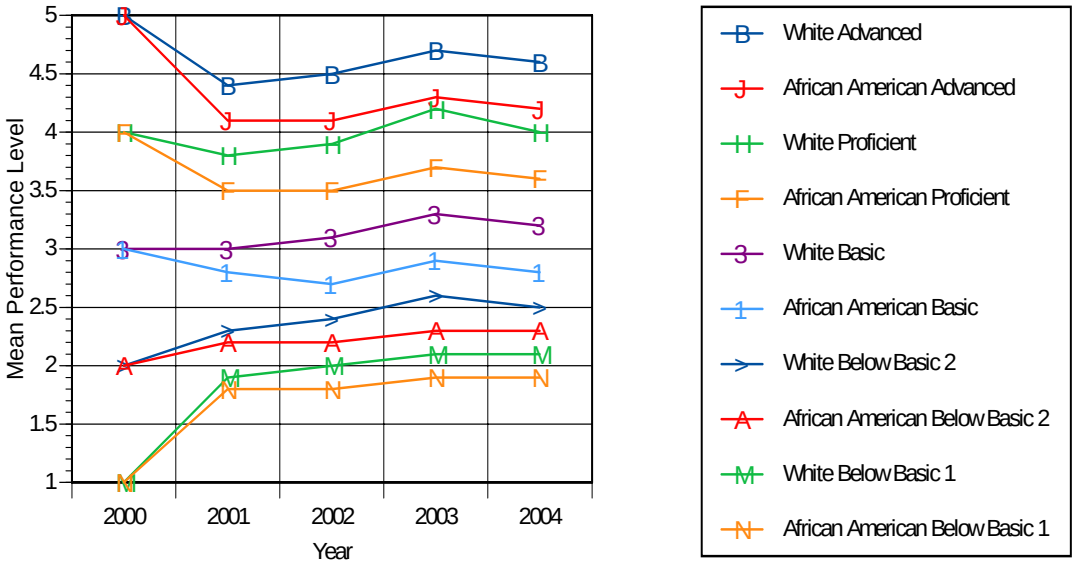


Figure 6
Mean PACT Math Performance Over 5 Years
By Ethnic Group & Initial Performance Level
2000-2004 Longitudinal Data
Students Attending Grade 3 in 2000



Perhaps the most notable trend in ELA and math scores for African American and White students over time is the development of a gap between the ethnic groups in average scores beginning in 2001, even though the ethnic groups were matched in achievement levels in 2000. These gaps tended to widen over time, especially for students initially scoring Proficient or Advanced.

Figure 7
Mean PACT ELA Performance Over 5 Years
By Gender & Initial Performance Level
2000-2004 Longitudinal Data
Students Attending Grade 3 in 2000

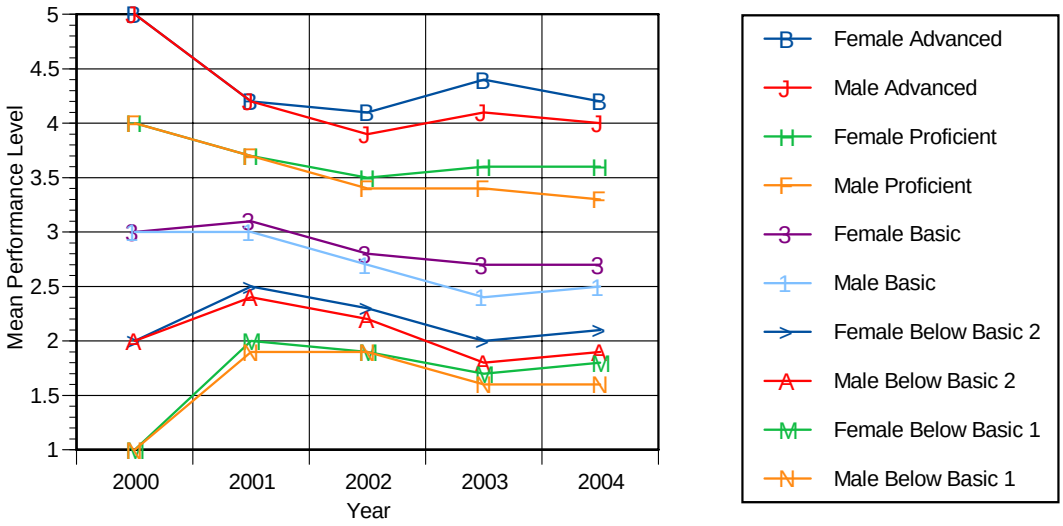
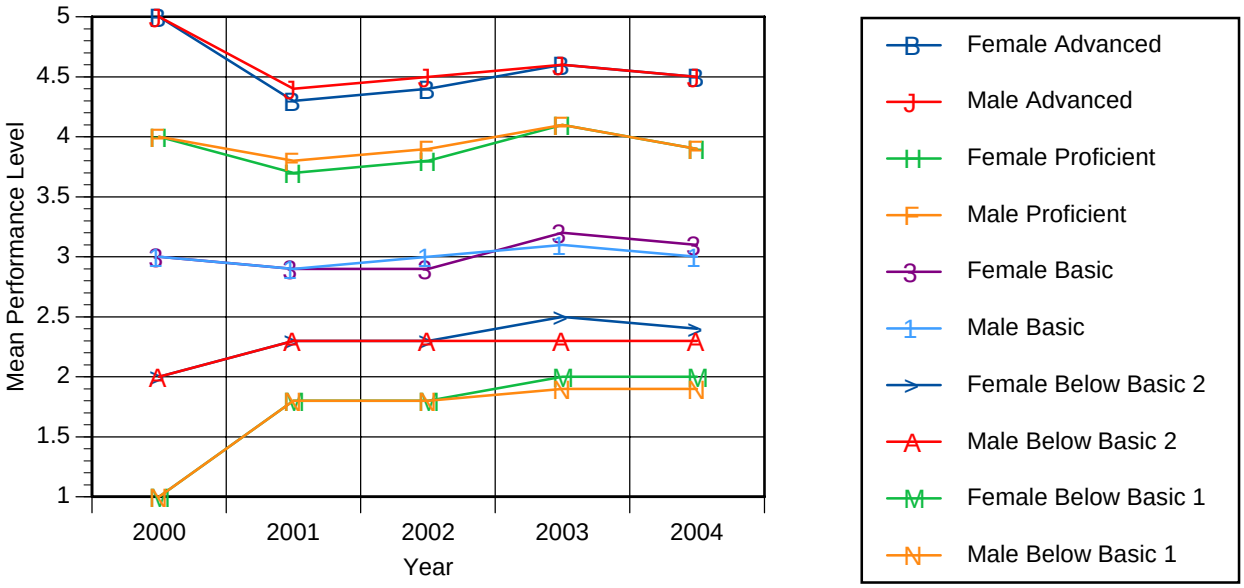


Figure 8
Mean PACT Math Performance Over 5 Years
By Gender & Initial Performance Level
2000-2004 Longitudinal Data
Students Attending Grade 3 in 2000



The trends in average performance for male and female students differ somewhat for ELA and math. In ELA, a gap between the gender groups in achievement develops and widens over time for students initially scoring Basic, Proficient, or Advanced. In contrast, math scores over time tend to be quite similar for males and females who initially scored Basic, Proficient, or Advanced.

ELA and Math Performance Trends By SES (Free/Reduced vs. Pay Lunch) Groups, Grade 3 2000 Cohort

Figure 9
Mean PACT ELA Performance Over 5 Years
By SES Group & Initial Performance Level
2000-2004 Longitudinal Data
Students Attending Grade 3 in 2000

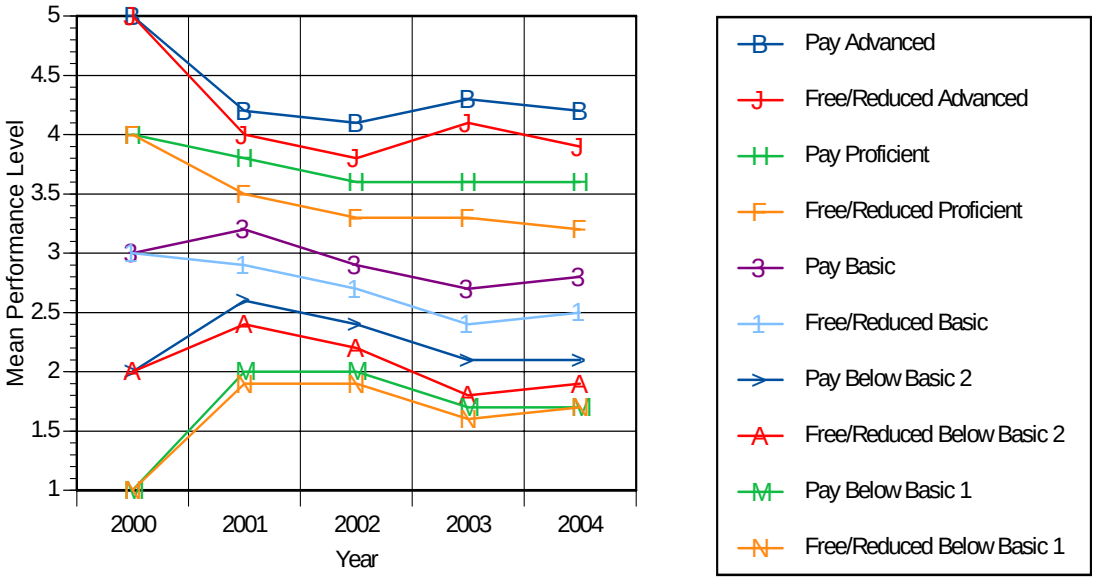
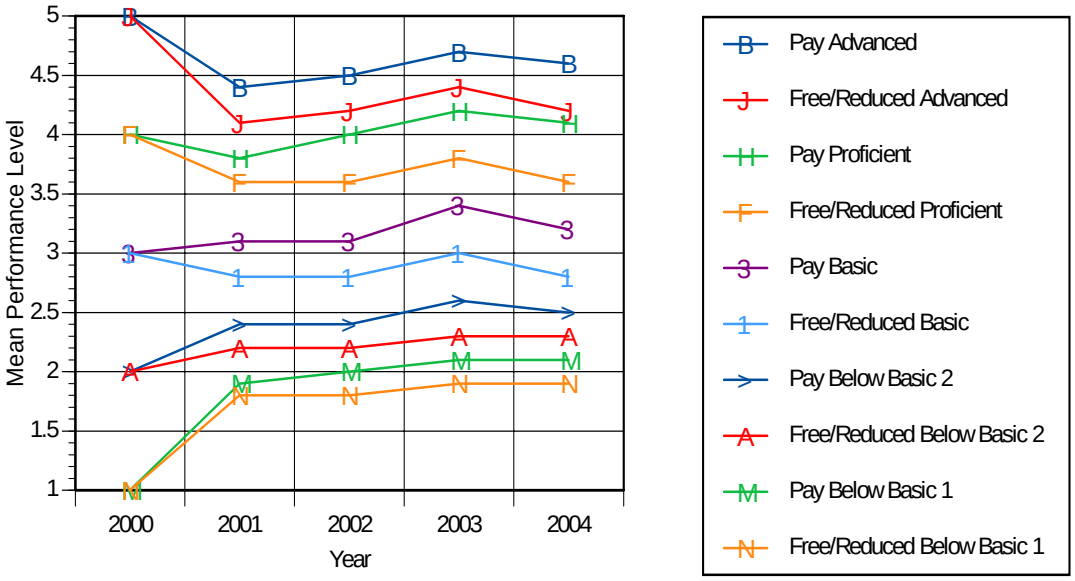


Figure 10
Mean PACT Math Performance Over 5 Years
By SES Group & Initial Performance Level
2000-2004 Longitudinal Data
Students Attending Grade 3 in 2000



The trends in average achievement of students participating in the federal free or reduced price lunch compared to students whose family incomes are high enough that they are not eligible for participation in the program are similar to that seen for ethnic groups. In general, gaps between the scores for these groups of students tended to be evident by 2001, and the gaps tended to widen over time, especially for students who initially scored Basic, Proficient, or Advanced.

Figure 11

Mean PACT ELA Performance Over 5 Years
Students Repeating Grade 3 in 2001
2000-2004 Longitudinal Data
Students Attending Grade 3 in 2000

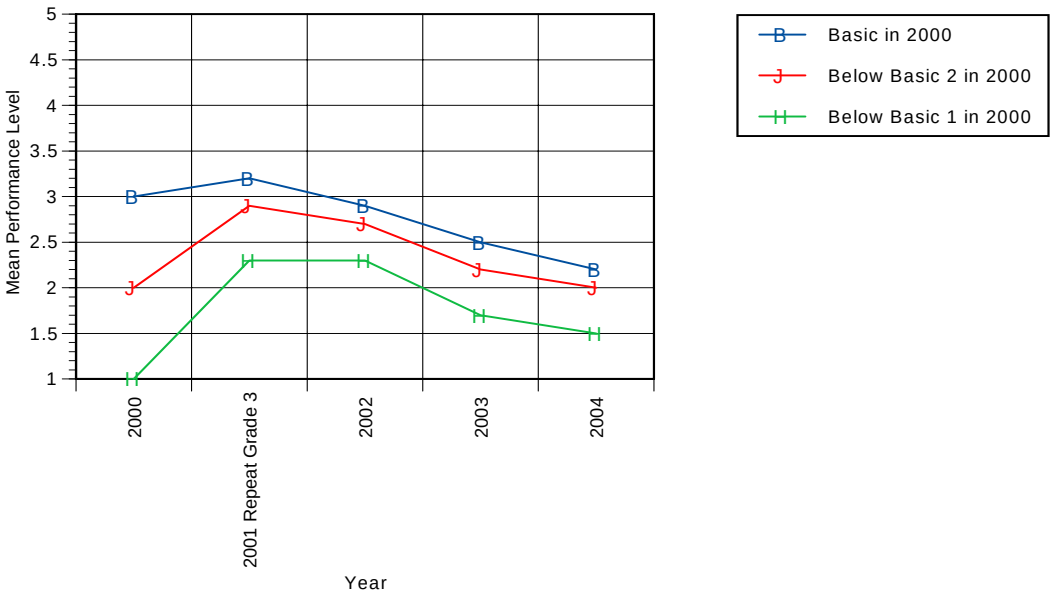
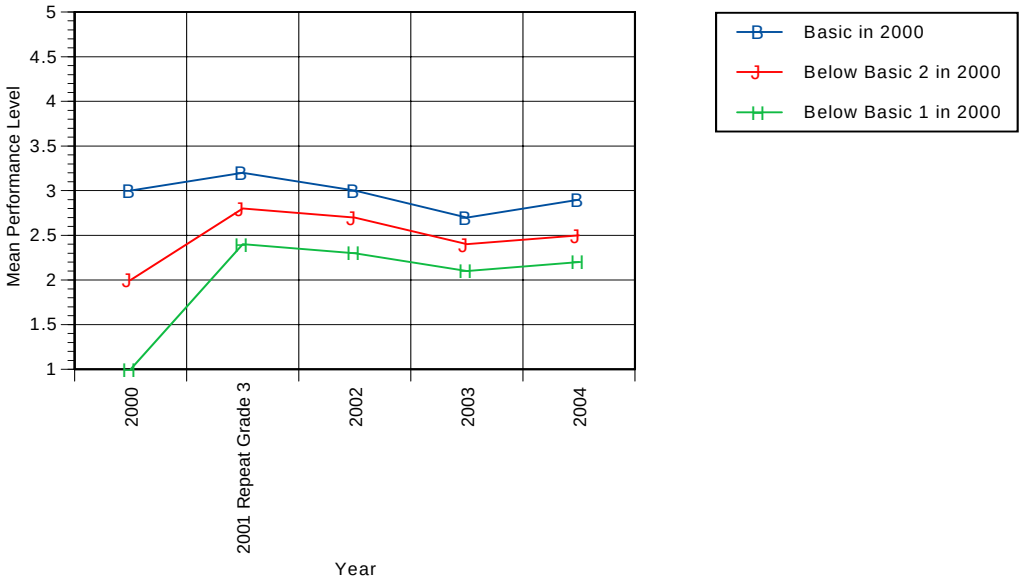


Figure 12
Mean PACT Math Performance Over 5 Years
Students Repeating Grade 3 in 2001
2000-2004 Longitudinal Data
Students Attending Grade 3 in 2000



Figures 11 and 12 illustrate the general trends in average ELA and math achievement among students who repeated a grade level between 2001 and 2004. Data from students who scored Proficient or Advanced in 2000 are not reported in Figures 11 and 12 because very few students who scored at those levels were retained in a grade in a subsequent year. The overall trend in ELA is that student achievement increases the year students repeat the grade: they take the same grade level test the year they repeat a grade as they did the year before, and scores tend to be higher on the retest. However, in ELA the trend in achievement after the year repeated is downward, with students initially scoring Basic in 2000 scoring Below Basic 2 on average in 2004, and students initially scoring Below Basic 1 scoring Below Basic 1 on average again by 2004. In math, students repeating a grade level also show increases in their average achievement in the year they repeat the grade, but the decline in scores in subsequent years is much less severe than that seen in ELA. It appears that the achievement gains observed in the year that students repeat a grade are better sustained over time in math than they are in ELA.

What differences were there among school districts in the achievement of their students over time?

Education Oversight Committee staff prepared district and school reports based on the longitudinal data from the Grade 3 2000 and Grade 4 2000 cohorts for school districts. The primary purpose for these reports was to provide information to school and district personnel about the progress over time of the two cohorts of students for instructional

planning. The reports were disseminated to school district superintendents and district office staff at a meeting at the S.C. Association of School Administrators headquarters building in Columbia on August 18, 2005. Representatives from 67 school districts attended that meeting; reports for the districts who did not attend the meeting are being mailed to district superintendents.

To assure that the results reported reflected district progress accurately, the district and school reports were based on data from students who attended the school district during the five year period (data from students who changed districts were not included in the district and school reports). Five measures of district and school progress were reported for ELA and math:

1. Percent of students initially scoring Below Basic 1 in 2000 whose scores increased to Basic or higher in 2004;
2. Percent of students initially scoring Below Basic 2 in 2000 whose scores increased to Basic or higher in 2004;
3. Percent of students initially scoring Basic in 2000 whose scores increased to Proficient or higher in 2004;
4. Percent of students initially scoring Basic in 2000 whose scores dropped to Below Basic in 2004 (low percentages for this measure indicate progress in raising overall achievement over time);
5. Percent of students initially scoring Proficient or Advanced in 2000 whose scores in 2004 were also Proficient or Advanced (high percentages for this measure indicate progress in maintaining high levels of achievement).

The five measures of progress in ELA and math were reported for twelve groups of students in the school or district:

1. All students;
2. Students enrolled in grade 6 in 2004 (students from the Grade 3 2000 cohort who repeated a grade level between 2000 and 2004);
3. Students enrolled in grade 7 in 2004 (students from the Grade 3 2000 cohort who were promoted each year plus students from the Grade 4 2000 cohort who repeated a grade);
4. Students enrolled in grade 8 in 2004 (students from the Grade 4 2000 cohort who were promoted each year);
5. Students from both cohorts who participated in the federal free or reduced price lunch program;
6. Students from both cohorts whose family incomes were too high to participate in the federal lunch program (“pay lunch”);
7. African American students from both cohorts;
8. White students from both cohorts;
9. African American students participating in the free/reduced price lunch program;
10. White students participating in the free/reduced price lunch program;
11. African American students not participating in the federal lunch program;
12. White students not participating in the federal lunch program.

The district and school reports reported up to 60 percentages for each subject area (five measures of progress times twelve student groups). Since the longitudinal database covers five years during which most students move from elementary to middle school, the school reports reported data broken out for each middle school and its feeder

elementary schools. In addition to reporting the district percentage for each progress measure and student group, the district reports also included the comparable statewide percentage and an indicator of the district's statistical difference from the statewide percentage (the statistical test used was the one-sample approximation to the binomial with an alpha level of .05). For each progress measure for each student group the district reports indicated whether the district performed statistically higher than the state, statistically lower than the state, statistically at the same level of the state, or if there were too few students in the group to make a statistical comparison. These statistical comparisons for ELA and math are summarized for each district in Appendix A. Since districts had too few students in the database to make all 60 comparisons for each subject area, the data in Appendix A are reported in terms of the percentage of total number of comparisons for which sufficient data were available.

The data in Appendix A indicate that there was variability among districts in their success at increasing individual students' achievement over time. Some districts were more successful in one subject area than the other, and some performed higher than the state in both areas. Since the August 18 meeting EOC staff have been contacted by a number of school and district personnel who are examining the reports and are conducting their own additional analyses to gain further insight into the instructional needs of their students.

Discussion

This analysis of the five year longitudinal PACT data has several findings which have possible policy implications which call for further study.

Almost one in ten students in the two cohorts studied repeated a grade level between third grade and seventh grade. However, the data suggest that, especially in English language arts (reading, writing, and reference skills measured by the PACT tests), the higher achievement attained during the year a grade is repeated is not sustained over time. This finding is disappointing, especially when the monetary costs and social costs (likelihood that retained students will later drop out of high school) associated with the retention are considered. "Socially promoting" low achieving students is also not effective, especially if other remedial interventions are not taken. Prevention of low achievement before students fall too far behind would appear to be a better strategy than retaining them after they fail. Prevention strategies would provide a more effective use of the funds currently associated with retention in grade.

The extent of difficulty encountered in raising the achievement of our lowest performing students is evident from the longitudinal PACT data, especially in ELA, where more students scored Below Basic in 2004 than in 2000 and almost 70% of the students scoring Below Basic continue to score Below Basic after five years of standards-based instruction. The struggle in ELA is not confined to low-achieving students, however: fewer students scored Proficient or Advanced in 2004 than in 2000 and almost half of the students who initially scored Proficient or Advanced scored at a lower performance level five years later. The yearly trends in ELA performance also reveal a tendency for ELA scores to decline from year to year. Several factors which may be related to ELA achievement need to be examined: teacher understanding of the standards and the extent to which they possess instructional skills effective for use with diverse student learners; student motivation for and interest in school success; expectations for high

achievement among all students, especially at the middle school level; and the ability of the tests used to accurately measure achievement growth. The relative difficulty encountered in raising reading achievement in South Carolina is also evident from the most recent National Assessment of Educational Progress (NAEP) scores, in which fourth grade reading scores increased by one point between 2002 and 2003 and eighth grade reading scores remained at the same level in both years; similar low growth in NAEP reading has also been observed at the national level.

It is encouraging that the longitudinal data for math show that individual student achievement through middle school has increased over time. It is also encouraging to observe that individual school districts have been successful in raising individual achievement in both ELA and math over time. We have much to learn from those school districts about their effective policies and practices and how we can support similar policies among all districts.

Appendix A

Summary of Longitudinal Student Progress By District

ELA Performance of School Districts Compared to State Means
5-year Longitudinal Pact Data 2000-2004

Obs	District	Percent Comparisons Higher Than State	Number of Comparisons Higher Than State	Percent Comparisons Lower Than State	Number of Comparisons Lower Than State	Percent Comparisons Same As State	Number of Comparisons Same As State	Total Number of Comparisons Made
1	ABBEVILLE	0.0	0	4.8	2	95.2	40	42
2	AIKEN	29.3	17	0.0	0	70.7	41	58
3	ALLENDALE	16.7	4	0.0	0	83.3	20	24
4	ANDERSON 1	69.2	27	0.0	0	30.8	12	39
5	ANDERSON 2	6.7	2	0.0	0	93.3	28	30
6	ANDERSON 3	9.4	3	3.1	1	87.5	28	32
7	ANDERSON 4	0.0	0	10.0	3	90.0	27	30
8	ANDERSON 5	30.8	16	0.0	0	69.2	36	52
9	BAMBERG 1	0.0	0	17.2	5	82.8	24	29
10	BAMBERG 2	53.3	8	0.0	0	46.7	7	15
11	BARNWELL 19	0.0	0	14.3	2	85.7	12	14
12	BARNWELL 29	41.7	5	0.0	0	58.3	7	12
13	BARNWELL 45	0.0	0	7.7	3	92.3	36	39
14	BEAUFORT	21.4	12	8.9	5	69.6	39	56
15	BERKELEY	15.3	9	20.3	12	64.4	38	59
16	CALHOUN	0.0	0	37.5	9	62.5	15	24
17	CHARLESTON	11.9	7	8.5	5	79.7	47	59
18	CHEROKEE	8.0	4	30.0	15	62.0	31	50
19	CHESTER	0.0	0	36.5	19	63.5	33	52
20	CHESTERFIELD	9.6	5	3.8	2	86.5	45	52
21	CLARENDON 1	0.0	0	16.7	4	83.3	20	24
22	CLARENDON 2	0.0	0	32.5	13	67.5	27	40

"Higher," "Lower," and "Same" performance as State based on results of statistical tests.
Some ELA comparisons could not be make because of insufficient sample sizes.

ELA Performance of School Districts Compared to State Means
5-year Longitudinal Pact Data 2000-2004

Obs	District	Percent Comparisons Higher Than State	Number of Comparisons Higher Than State	Percent Comparisons Lower Than State	Number of Comparisons Lower Than State	Percent Comparisons Same As State	Number of Comparisons Same As State	Total Number of Comparisons Made
23	CLARENDON 3	0.0	0	50.0	9	50.0	9	18
24	COLLETON	1.9	1	1.9	1	96.2	50	52
25	DARLINGTON	0.0	0	1.9	1	98.1	52	53
26	DILLON 1	0.0	0	0.0	0	100.0	9	9
27	DILLON 2	0.0	0	29.7	11	70.3	26	37
28	DILLON 3	3.8	1	3.8	1	92.3	24	26
29	DORCHESTER 2	10.3	6	0.0	0	89.7	52	58
30	DORCHESTER 4	3.3	1	6.7	2	90.0	27	30
31	EDGEFIELD	27.9	12	0.0	0	72.1	31	43
32	FAIRFIELD	0.0	0	34.3	12	65.7	23	35
33	FLORENCE 1	0.0	0	43.6	24	56.4	31	55
34	FLORENCE 2	0.0	0	6.7	1	93.3	14	15
35	FLORENCE 3	0.0	0	12.5	5	87.5	35	40
36	FLORENCE 4	25.0	4	12.5	2	62.5	10	16
37	FLORENCE 5	0.0	0	19.0	4	81.0	17	21
38	GEORGETOWN	9.1	5	34.5	19	56.4	31	55
39	GREENVILLE	0.0	0	22.4	13	77.6	45	58
40	GREENWOOD 50	17.6	9	2.0	1	80.4	41	51
41	GREENWOOD 51	0.0	0	35.3	6	64.7	11	17
42	GREENWOOD 52	5.0	1	0.0	0	95.0	19	20
43	HAMPTON 1	4.8	2	0.0	0	95.2	40	42
44	HAMPTON 2	0.0	0	13.0	3	87.0	20	23

"Higher," "Lower," and "Same" performance as State based on results of statistical tests.
Some ELA comparisons could not be make because of insufficient sample sizes.

ELA Performance of School Districts Compared to State Means
5-year Longitudinal Pact Data 2000-2004

Obs	District	Percent Comparisons Higher Than State	Number of Comparisons Higher Than State	Percent Comparisons Lower Than State	Number of Comparisons Lower Than State	Percent Comparisons Same As State	Number of Comparisons Same As State	Total Number of Comparisons Made
45	HORRY	69.8	37	0.0	0	30.2	16	53
46	JASPER	0.0	0	13.8	4	86.2	25	29
47	KERSHAW	13.2	7	0.0	0	86.8	46	53
48	LANCASTER	0.0	0	16.1	9	83.9	47	56
49	LAURENS 55	48.1	25	0.0	0	51.9	27	52
50	LAURENS 56	0.0	0	37.8	17	62.2	28	45
51	LEE	0.0	0	26.7	8	73.3	22	30
52	LEXINGTON 1	6.4	3	21.3	10	72.3	34	47
53	LEXINGTON 2	35.3	18	0.0	0	64.7	33	51
54	LEXINGTON 3	0.0	0	2.8	1	97.2	35	36
55	LEXINGTON 4	0.0	0	55.6	20	44.4	16	36
56	LEXINGTON 5	36.2	17	6.4	3	57.4	27	47
57	MCCORMICK	23.5	4	11.8	2	64.7	11	17
58	MARION 1	0.0	0	56.3	18	43.8	14	32
59	MARION 2	0.0	0	6.9	2	93.1	27	29
60	MARION 7	20.0	3	0.0	0	80.0	12	15
61	MARLBORO	4.3	2	31.9	15	63.8	30	47
62	NEWBERRY	0.0	0	20.4	10	79.6	39	49
63	OCONEE	19.6	10	7.8	4	72.5	37	51
64	ORANGEBURG 3	0.0	0	21.9	7	78.1	25	32
65	ORANGEBURG 4	2.2	1	13.3	6	84.4	38	45
66	ORANGEBURG 5	0.0	0	7.9	3	92.1	35	38

"Higher," "Lower," and "Same" performance as State based on results of statistical tests.
Some ELA comparisons could not be make because of insufficient sample sizes.

ELA Performance of School Districts Compared to State Means
5-year Longitudinal Pact Data 2000-2004

Obs	District	Percent Comparisons Higher Than State	Number of Comparisons Higher Than State	Percent Comparisons Lower Than State	Number of Comparisons Lower Than State	Percent Comparisons Same As State	Number of Comparisons Same As State	Total Number of Comparisons Made
67	PICKENS	1.9	1	11.3	6	86.8	46	53
68	RICHLAND 1	5.7	3	13.2	7	81.1	43	53
69	RICHLAND 2	19.2	10	0.0	0	80.8	42	52
70	SALUDA	0.0	0	3.1	1	96.9	31	32
71	SPARTANBURG 1	47.5	19	0.0	0	52.5	21	40
72	SPARTANBURG 2	88.9	40	0.0	0	11.1	5	45
73	SPARTANBURG 3	45.2	14	0.0	0	54.8	17	31
74	SPARTANBURG 4	0.0	0	28.9	11	71.1	27	38
75	SPARTANBURG 5	0.0	0	9.5	4	90.5	38	42
76	SPARTANBURG 6	6.1	3	0.0	0	93.9	46	49
77	SPARTANBURG 7	2.2	1	19.6	9	78.3	36	46
78	SUMTER 2	0.0	0	14.5	8	85.5	47	55
79	SUMTER 17	0.0	0	43.5	20	56.5	26	46
80	UNION	8.2	4	8.2	4	83.7	41	49
81	WILLIAMSBURG	30.3	10	9.1	3	60.6	20	33
82	YORK 1	53.3	24	0.0	0	46.7	21	45
83	YORK 2	4.8	2	9.5	4	85.7	36	42
84	YORK 3	0.0	0	1.9	1	98.1	53	54
85	YORK 4	11.5	3	0.0	0	88.5	23	26

"Higher," "Lower," and "Same" performance as State based on results of statistical tests.
Some ELA comparisons could not be make because of insufficient sample sizes.

Math Performance of School Districts Compared to State Means
5-year Longitudinal Pact Data 2000-2004

Obs	District	Percent Comparisons Higher Than State	Number of Comparisons Higher Than State	Percent Comparisons Lower Than State	Number of Comparisons Lower Than State	Percent Comparisons Same As State	Number of Comparisons Same As State	Number of Comparisons Made
1	ABBEVILLE	10.9	5	0.0	0	89.1	41	46
2	AIKEN	47.5	28	0.0	0	52.5	31	59
3	ALLENDALE	4.0	1	28.0	7	68.0	17	25
4	ANDERSON 1	73.2	30	0.0	0	26.8	11	41
5	ANDERSON 2	8.1	3	0.0	0	91.9	34	37
6	ANDERSON 3	12.5	5	22.5	9	65.0	26	40
7	ANDERSON 4	0.0	0	13.5	5	86.5	32	37
8	ANDERSON 5	58.2	32	0.0	0	41.8	23	55
9	BAMBERG 1	9.4	3	0.0	0	90.6	29	32
10	BAMBERG 2	0.0	0	41.2	7	58.8	10	17
11	BARNWELL 19	0.0	0	0.0	0	100.0	14	14
12	BARNWELL 29	0.0	0	20.0	3	80.0	12	15
13	BARNWELL 45	0.0	0	35.7	15	64.3	27	42
14	BEAUFORT	21.1	12	7.0	4	71.9	41	57
15	BERKELEY	28.3	17	1.7	1	70.0	42	60
16	CALHOUN	3.6	1	17.9	5	78.6	22	28
17	CHARLESTON	13.6	8	25.4	15	61.0	36	59
18	CHEROKEE	0.0	0	13.7	7	86.3	44	51
19	CHESTER	1.9	1	11.1	6	87.0	47	54
20	CHESTERFIELD	28.8	15	0.0	0	71.2	37	52
21	CLARENDON 1	0.0	0	20.0	5	80.0	20	25

"Higher," "Lower," and "Same" performance as State based on results of statistical tests.
Some Math comparisons could not be make because of insufficient sample sizes.

Math Performance of School Districts Compared to State Means
5-year Longitudinal Pact Data 2000-2004

Obs	District	Percent Comparisons Higher Than State	Number of Comparisons Higher Than State	Percent Comparisons Lower Than State	Number of Comparisons Lower Than State	Percent Comparisons Same As State	Number of Comparisons Same As State	Number of Comparisons Made
22	CLARENDON 2	0.0	0	12.5	5	87.5	35	40
23	CLARENDON 3	0.0	0	14.3	3	85.7	18	21
24	COLLETON	0.0	0	38.9	21	61.1	33	54
25	DARLINGTON	1.9	1	18.5	10	79.6	43	54
26	DILLON 1	0.0	0	0.0	0	100.0	10	10
27	DILLON 2	0.0	0	57.1	24	42.9	18	42
28	DILLON 3	32.1	9	0.0	0	67.9	19	28
29	DORCHESTER 2	62.1	36	0.0	0	37.9	22	58
30	DORCHESTER 4	6.7	2	10.0	3	83.3	25	30
31	EDGEFIELD	34.1	15	0.0	0	65.9	29	44
32	FAIRFIELD	0.0	0	61.1	22	38.9	14	36
33	FLORENCE 1	1.7	1	58.6	34	39.7	23	58
34	FLORENCE 2	0.0	0	5.6	1	94.4	17	18
35	FLORENCE 3	4.8	2	7.1	3	88.1	37	42
36	FLORENCE 4	0.0	0	0.0	0	100.0	14	14
37	FLORENCE 5	3.3	1	3.3	1	93.3	28	30
38	GEORGETOWN	1.8	1	10.7	6	87.5	49	56
39	GREENVILLE	0.0	0	81.4	48	18.6	11	59
40	GREENWOOD 50	21.1	12	0.0	0	78.9	45	57
41	GREENWOOD 51	0.0	0	0.0	0	100.0	19	19
42	GREENWOOD 52	3.8	1	3.8	1	92.3	24	26
43	HAMPTON 1	0.0	0	41.3	19	58.7	27	46

"Higher," "Lower," and "Same" performance as State based on results of statistical tests.
Some Math comparisons could not be make because of insufficient sample sizes.

Math Performance of School Districts Compared to State Means
5-year Longitudinal Pact Data 2000-2004

Obs	District	Percent Comparisons Higher Than State	Number of Comparisons Higher Than State	Percent Comparisons Lower Than State	Number of Comparisons Lower Than State	Percent Comparisons Same As State	Number of Comparisons Same As State	Number of Comparisons Made
44	HAMPTON 2	0.0	0	5.0	1	95.0	19	20
45	HORRY	74.1	43	0.0	0	25.9	15	58
46	JASPER	0.0	0	36.7	11	63.3	19	30
47	KERSHAW	12.5	7	7.1	4	80.4	45	56
48	LANCASTER	0.0	0	24.6	14	75.4	43	57
49	LAURENS 55	62.3	33	0.0	0	37.7	20	53
50	LAURENS 56	4.0	2	10.0	5	86.0	43	50
51	LEE	0.0	0	51.9	14	48.1	13	27
52	LEXINGTON 1	5.9	3	25.5	13	68.6	35	51
53	LEXINGTON 2	1.9	1	7.5	4	90.6	48	53
54	LEXINGTON 3	14.3	6	0.0	0	85.7	36	42
55	LEXINGTON 4	0.0	0	74.4	29	25.6	10	39
56	LEXINGTON 5	53.8	28	0.0	0	46.2	24	52
57	MCCORMICK	0.0	0	0.0	0	100.0	16	16
58	MARION 1	0.0	0	0.0	0	100.0	40	40
59	MARION 2	0.0	0	10.0	3	90.0	27	30
60	MARION 7	0.0	0	25.0	4	75.0	12	16
61	MARLBORO	0.0	0	19.6	10	80.4	41	51
62	NEWBERRY	1.8	1	1.8	1	96.4	53	55
63	OCONEE	57.4	31	0.0	0	42.6	23	54
64	ORANGEBURG 3	0.0	0	46.7	14	53.3	16	30
65	ORANGEBURG 4	4.1	2	28.6	14	67.3	33	49

"Higher," "Lower," and "Same" performance as State based on results of statistical tests.
Some Math comparisons could not be make because of insufficient sample sizes.

Math Performance of School Districts Compared to State Means
5-year Longitudinal Pact Data 2000-2004

Obs	District	Percent Comparisons Higher Than State	Number of Comparisons Higher Than State	Percent Comparisons Lower Than State	Number of Comparisons Lower Than State	Percent Comparisons Same As State	Number of Comparisons Same As State	Number of Comparisons Made
66	ORANGEBURG 5	0.0	0	27.9	12	72.1	31	43
67	PICKENS	3.8	2	7.7	4	88.5	46	52
68	RICHLAND 1	7.3	4	43.6	24	49.1	27	55
69	RICHLAND 2	60.4	32	0.0	0	39.6	21	53
70	SALUDA	27.3	9	0.0	0	72.7	24	33
71	SPARTANBURG 1	19.0	8	0.0	0	81.0	34	42
72	SPARTANBURG 2	45.7	21	0.0	0	54.3	25	46
73	SPARTANBURG 3	10.5	4	0.0	0	89.5	34	38
74	SPARTANBURG 4	4.5	2	9.1	4	86.4	38	44
75	SPARTANBURG 5	0.0	0	55.6	25	44.4	20	45
76	SPARTANBURG 6	7.7	4	1.9	1	90.4	47	52
77	SPARTANBURG 7	2.0	1	28.0	14	70.0	35	50
78	SUMTER 2	10.7	6	14.3	8	75.0	42	56
79	SUMTER 17	0.0	0	29.4	15	70.6	36	51
80	UNION	0.0	0	38.0	19	62.0	31	50
81	WILLIAMSBURG	51.6	16	9.7	3	38.7	12	31
82	YORK 1	68.1	32	0.0	0	31.9	15	47
83	YORK 2	0.0	0	31.8	14	68.2	30	44
84	YORK 3	1.8	1	8.9	5	89.3	50	56
85	YORK 4	0.0	0	6.9	2	93.1	27	29

"Higher," "Lower," and "Same" performance as State based on results of statistical tests.
Some Math comparisons could not be make because of insufficient sample sizes.